

Mature Larvae of the Old World Bee Genus *Panurgus* (Hymenoptera, Apoidea)

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Abstract: This paper describes the mature larva of *Panurgus dentipes* Latreille and compares it with the previously published accounts of other species in the genus.

The purpose of this paper is to describe the mature larva of *Panurgus dentipes* Latreille (Andrenidae, Panurginae) and to compare it with the other known larvae of *Panurgus*, so that these data can be referred to in a study of the larvae of North American Panurginae (Rozen, in press). Larvae of *dentipes* were kindly made available by Siavosh Tirgari, Ahwaz Agricultural College, Iran.

Two other species of *Panurgus* have been described and illustrated: *banksianus* (Kirby) (Micheli, 1931) and *calcaratus* (Scopoli) (Micheli, 1936). Although Micheli's written accounts provide little specific information that can be compared with the following description of *dentipes*, his illustrations suggest that the three species probably agree in most major respects. All have an elongate clypeus and reduced body tubercles. The somewhat more pronounced segmental annulations of the species studied by Micheli presumably can be explained by the fact that his specimens were postdefecating forms whereas ours are predefecating. No known North American panurgine (*Nomadopsis*, *Calliopsis*, *Perdita*, *Pseudopanurgus*, and *Panurginus*) possesses an elongate clypeus and only *Panurginus* is known to have reduced dorsal body tubercles. The European *Melitturga clavicornis* (Latreille) (Rozen, 1965) lacks both these features of *Panurgus*.

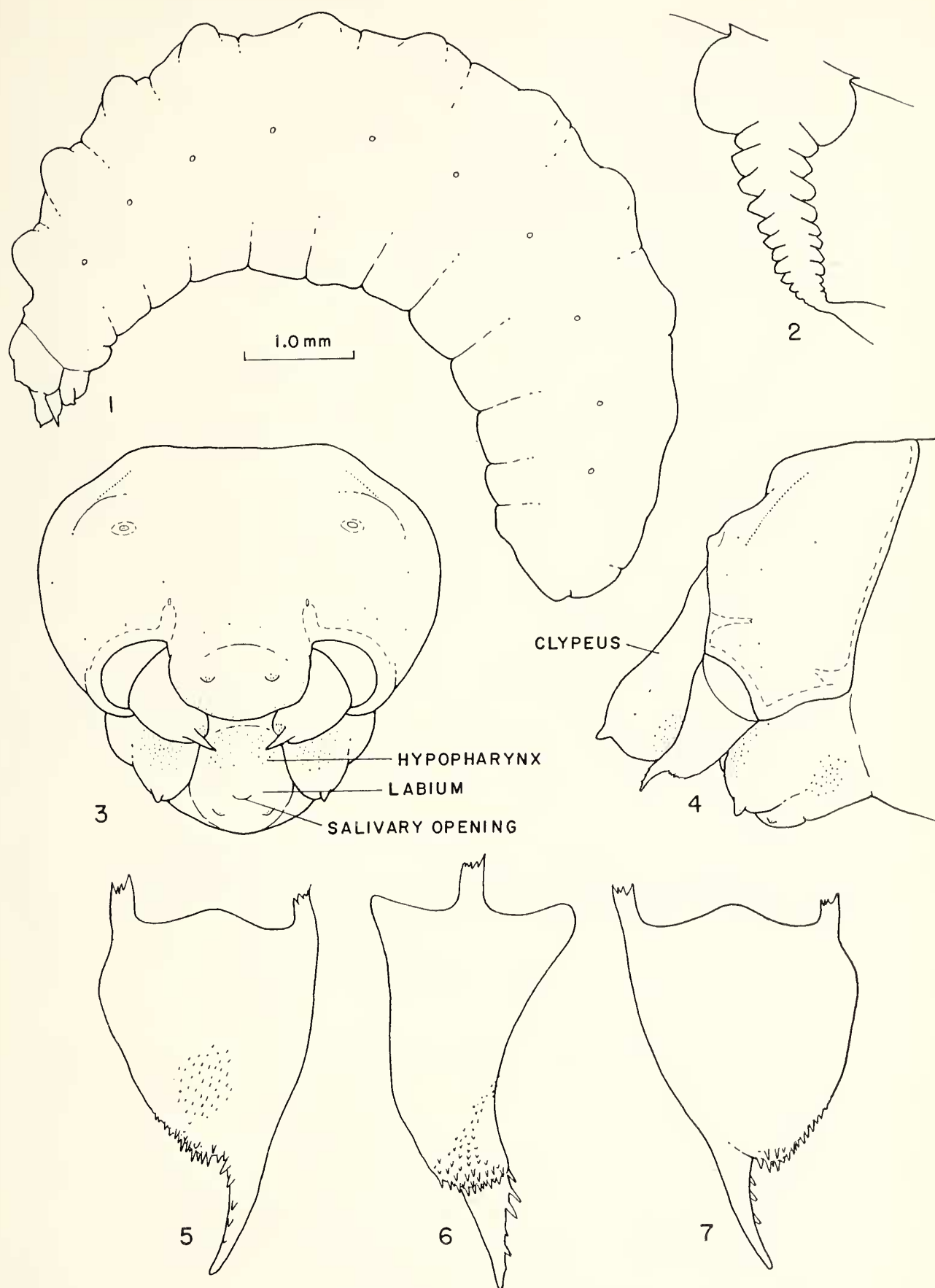
Mature *P. banksianus* larvae are larger than those of the other two species and Micheli stated there were some differences between the mandibles of *banksianus* and *calcaratus*. At the present time we do not know if larval *calcaratus* and *dentipes* can be distinguished from one another.

Panurgus dentipes Latreille (Figs. 1-7)

BODY LENGTH 7.5 mm.

HEAD (Figs. 3-4): Integument with scattered sensilla but without setae; antennae, palpi, and labral tubercles scarcely pigmented; vertex moderately produced on each side above antenna; antennae arising from low prominences; clypeal area abnormally elongate compared with that of other known Panurginae (*Perdita*, *Panurginus*, *Pseudopanurgus*, *Melitturga*, *Calliopsis*, and *Nomadopsis*). Tentorium complete; posterior thickening of head capsule moderately well developed; hypostomal ridge well developed; pleurostomal ridge moderately developed; epistomal ridge distinct below anterior tentorial pits, absent mesiad of pits; parietal bands evident. Antenna a low convexity with few (2-3 on specimen examined) sensilla. Labrum bearing two moderately small tubercles. Mandible (Figs. 5-7) moderately

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FIGS. 1-7. Mature larva of *Panurgus dentipes* Latreille.

FIG. 1. Predefecating larva, lateral view. FIG. 2. Spiracle. FIG. 3. Head, frontal view. FIG. 4. Head, lateral view. FIGS. 5-7. Left mandible, dorsal, inner, and ventral views. Scale refers to Fig. 1.

slender, curved as seen in inner view (Fig. 6), narrowing to single point; upper apical margin with conspicuous serrations; lower margin not serrate; cusp strongly produced with numerous teeth, but without large tooth like that of *Melitturga*. Maxilla, as seen in lateral view (Fig. 4), projecting only to apex of labium; palpus fairly slender, directed downward somewhat as in *Panurginus*; integument of maxilla spiculate on dorsal surface but, unlike that of *Panurginus*, palpus not spiculate. Hypopharynx spiculate; hypopharyngeal groove absent, as in most *Perdita*. Labium projecting nearly as far as maxillae as seen in lateral view, but labiomaxillary region recessed in comparison with labroclypeal region; labium indistinctly divided into prementum and postmentum; lateral spiculate areas on labiomaxillary region probably corresponding to maxillary conjunctiva; labial palpus evident, but smaller than maxillary palpus. Salivary opening a gently curved slit.

BODY: Color whitish, spiculate in various areas; tenth abdominal segment spiculate ventrally. Anterior dorsal tubercles (Fig. 1) conical, nonspiculate apically, moderately low and rounded; tubercles becoming less pronounced and perhaps somewhat transverse on posterior body segments; terminal segment not produced dorsally. Spiracles (Fig. 2) moderately small; atrium projecting slightly above body wall; atrial wall smooth; peritreme present; primary tracheal opening with collar; subatrium moderate in length, not elongate as compared with that of *Panurginus*, *Melitturga*, *Perdita*, *Calliopsis*, and *Nomadopsis*.

MATERIAL STUDIED: Five mature predefecating larvae, Lusignan and Usson, department of Vienne, France, mid-September, 1963 (S. Turgari). Associated adults identified by collector.

Literature Cited

- MICHELI, L. 1931. Note biologiche e morfologiche sugli imenotteri (Contributo 3°). Atti Soc. Italiana Sci. Nat. e Mus. Civ. Stor. Nat., **70**: 19-28, figs.
- . 1936. Note biologiche e morfologiche sugli imenotteri (VI Serie). *Ibid.*, **75**: 5-16, figs.
- ROZEN, J. G., JR. 1965. The biology and immature stages of *Melitturga clavicornis* (Latreille) and of *Sphecodes albilabris* (Kirby) and the recognition of the Oxaeidae at the family level (Hymenoptera, Apoidea). Amer. Mus. Novitates, no. 2224, pp. 1-18, figs. 1-22.
- . Systematics of the larvae of North American panurgine bees (Hymenoptera, Apoidea). Amer. Mus. Novitates. (In press.)

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